15. A new Section 25.213 is added to read as follows:

§ 25.213 Inter-Service coordination requirements for the 1.6/2.4 GHz Mobile-Satellite ~~service~~ Service.

(a) Protection of the radio astronomy service against interference from ~~mobile-satellite service~~ **Mobile-Satellite Service** systems in the 1610.6-1613.8 MHz band **and 4990-5000 MHz band**.

(1) Protection zones. All 1.6/2.4 GHz Mobile-Satellite Service systems shall be capable of determining the position of the ~~use~~ transceivers accessing the space segment through either internal radiodetermination calculations or external sources such as LORAN-C or the Global Positioning System. During periods of radio astronomy observations, land mobile earth stations shall not ~~operate~~ **cause harmful interference** in the 1610.6-1613.8 MHz frequency band when located within the geographic protection zones defined by the radio observatory coordinates and separation distances as follows:

(i) Within a 160 km radius of the following radio astronomy sites:

Observatory	Latitude (DMS)	Longitude (DMS)
Arecibo, PR	18 20 46	66 45 11
Green Bank Telescope, WV	38 25 59	79 50 24
	38 26 08	79 49 42
Very Large Array, NM	34 04 43	107 37 04
Owens Valley, CA	37 13 54	118 17 36
Ohio State, OH	40 15 06	83 02 54

(ii) Within a 50 km radius of the following sites:

Observatory	Latitude (DMS)	Longitude (DMS)
Pile Town, NM	34 18 04	108 07 07
Los Alamos, NM	35 46 30	106 14 42
Kitt Peak, AZ	31 57 22	111 36 42
Ft. Davis, TX	30 38 06	103 56 39
N. Liberty, LA	41 46 17	91 34 26
Brewster, WA	48 07 53	119 40 55
Owens Valley, CA	37 13 54	118 16 34
St. Croix, VI	17 45 31	64 35 03
Mauna Kea, HI	19 48 16	155 27 29
Hancock, NH	42 56 01	71 59 12

(iii) For airborne earth stations operating in the 1610.6-1613.8 MHz frequency band, the separation distance shall be the larger of the distance specified in subparagraph ~~(1)~~**(i)** or ~~(2)~~**(ii)** of this paragraph, as appropriate, or the distance, d, as given by the formula:

d (km) = 4.1 square root of (h)

where h is the altitude of the aircraft in meters above ground level.

(iv) A smaller geographic protection zone may be used in lieu of the areas specified in subparagraphs (i), (ii), and (iii) of this paragraph if agreed by the ~~mobile-satellite service~~ **Mobile-Satellite Service** licensee and the Electromagnetic Spectrum Management Unit (ESMU), National Science Foundation, Washington, D.C. upon a showing by the ~~mobile-satellite service~~ **Mobile-Satellite Service** licensee that the operation of a mobile earth station will not cause harmful interference to a radio astronomy observatory during periods of observation.

(v) The ESMU shall notify ~~mobile-satellite service~~ **Mobile-Satellite Service** space station licensees authorized to operate in the ~~1610.6-1613.8~~ **1610-1626.5** MHz band of periods of radio astronomy observations. The mobile-satellite system shall be capable of terminating **or otherwise controlling** operations in this band within the first position fix of the mobile terminal prior to transmission or as soon as practicable after entering the protection zone **to prevent harmful interference**.

(vi) A beacon-actuated protection zone may be used in lieu of fixed protection zones in the 1610.6-1613.8 MHz band if a coordination agreement is reached between a mobile satellite system licensee and the EMSU on the specifics of beacon operations.

(vii) Additional radio astronomy sites, not located within 100 miles of the 100 most populous urbanized areas as defined by the United States Census Bureau at the time, may be afforded similar protection one year after notice to the mobile-satellite system licensee and the issuance of a public notice by the Commission.

(2) Mobile-satellite service space stations transmitting in the 1613.8-1626.5 MHz band shall ~~limit out-of-band emissions so as not to exceed -238 dB (w/m2/Hz) during observations at~~ **implement such coordination techniques as necessary to avoid harmful interference to** the facilities listed in ~~paragraph (a)(1)(i) of this section and -198 dB (W/m2/Hz)~~

~~during the observations at the facilities listed in paragraph (a)(1)(ii) of this section.~~ **paragraphs (a)(1)(i) and (a)(1)(ii) of this section during periods of observation.**

(3) Coordination between MSS/RDSS operators and ESMU shall be undertaken to avoid scheduling radio astronomy observations during peak MSS/RDSS traffic periods to the greatest extent practicable.

~~(3)~~**(4)** Mobile-~~satellite service~~ **Satellite Service** space stations operating in the 2483.5-2500 MHz frequency band shall limit spurious emission levels in the 4990-5000 MHz band so as not to exceed -241 dB(W/m^2/Hz) at the surface of the Earth.

(b) Protection of the radionavigation-satellite service operating in the 1559-1610 MHz band. Mobile earth stations operating in the 1610-1626.5 MHz band shall limit out-of-band emissions in the 1574.397-1576.443 MHz band so as not to exceed an e.i.r.p. density level of -70 dB (W/MHz) average over any 20 ms period. The e.i.r.p. of any discrete spurious emission (i.e., ~~bandwith~~ **bandwidth** less than 600 Hz) in the 1574.397-1576.443 MHz band shall not exceed -80 dBW.

(c) Protection of aeronautical radionavigation systems operating pursuant to International Radio Regulation RR 732.

(1) ~~Mobile~~ **In the event that the e.i.r.p. density levels of mobile**-satellite earth stations transmitting in the 1610-1626.5 MHz band ~~shall limit e.i.r.p. levels to no greater than~~ **exceed** -15 dB (W/4kHz) on frequencies being used by systems operating in accordance with International Radio Regulation RR 732, ~~and to no greater than~~ **or exceed** -3 dB (W/4kHz) on frequencies that are not so being used**, such earth stations shall coordinate their operations with systems operating in accordance with RR 732, and shall implement such coordination techniques as to avoid harmful interference to such systems**. Pursuant to RR 731E and RR 731F, all mobile-satellite operations in the 1610-1626.5 MHz band (both Earth-to-space and space-to-Earth) must be coordinated with systems operating pursuant to RR 732. Such mobile-satellite stations shall not cause harmful interference to, or claim protection from, stations in the aeronautical radionavigation service and stations operating pursuant to RR 732.

(2) Airborne 1.6/2.4 Mobile-Satellite Service earth stations shall not operate on civil aircraft unless the earth station has a direct physical connection to the aircraft **cockpit and/or** cabin communication system.

(3) Mobile-satellite space stations ~~transmitting in the 1613.8-1626.5 MHz space-to-Earth~~ **whose space-to-Earth links operate in the 1613.8-1626.5 MHz** band shall not exceed a power flux density level **at the Earth's surface** of -141.5 dBW/m^2-4 KHz in the ~~1613.8-1616 MHz band.~~ **frequencies used by systems operating in accordance with International Radio Regulation RR 732.**

(d) Protection from fixed stations operating pursuant to International Radio Regulation RR 730. Pursuant to RR 731E, **and subject to Resolution 46 (formerly COM5/8),** all mobile-satellite operations in the 1610-1626.5 MHz band (both Earth-to-space and space-to-Earth) must be coordinated with systems operating pursuant to RR 730. All such mobile-satellite stations shall not cause harmful interference to, or claim protection from, stations in the fixed service operating pursuant to RR 730.

16. A new Section 25.278 is added to read as follows:

§ 25.278 Additional coordination obligations for non-geostationary and geostationary satellite systems in frequencies allocated to the Fixed-Satellite Service.

Licensees of non-geostationary satellite systems that use frequency bands allocated to the ~~fixed-satellite service~~ **Fixed-Satellite Service** for their feeder link operations shall coordinate their operations with licensees of geostationary ~~fixed-satellite service~~ **Fixed-Satellite Service** systems licensed by the Commission for operation in the same frequency bands. Licensees of geostationary ~~fixed-satellite service~~ **Fixed-Satellite Service** systems in the frequency bands that are licensed to non-geostationary satellite systems for feeder link operations shall coordinate their operations with the licensees of such non-geostationary satellite systems.

17. A new section 25.279 Inter-satellite service.

§ 25.279 Inter-satellite service

(1) Any non-geostationary satellite communicating with other space stations may use frequencies in the inter-satellite service as indicated in § 2.106. ~~This~~ **Such operation or use** does not preclude the use of other frequencies for such purposes as provided for in several service definitions, e.g., FSS. The technical details of the proposed inter-satellite link shall be provided in accordance with § 25.114(c).

(2) Operating conditions. In order to ensure compatible operations with authorized users in the frequency bands to be utilized for operations in the inter-satellite service,

these inter-satellite service systems must operate in accordance with the conditions specified in this section.

(a) Coordination requirements with federal government users.

(i) In frequency bands allocated for use by the inter-satellite service that are also authorized for use by agencies of the federal government, the federal use of frequencies in the inter-satellite service frequency bands is under the regulatory jurisdiction of the National Telecommunications and Information Administration (NTIA).

(ii) The Commission will use its existing procedures to reach agreement with NTIA to achieve compatible operations between federal government users under the jurisdiction of NTIA and inter-satellite service systems through frequency assignment and coordination practice established by NTIA and the Interdepartment Radio Advisory Committee (IRAC). In order to facilitate such frequency assignment and coordination, applicants shall provide the Commission with sufficient information to evaluate electromagnetic compatibility with the federal government users of the spectrum, and any additional information requested by the Commission. As part of the coordination process, applicants shall show that they will not cause **unacceptable** interference to authorized federal government users, based upon existing system information provided by the government. The frequency assignment and coordination of the satellite system shall be completed prior to grant of construction authorization.

(b) Coordination among inter-satellite service systems. Applicants for authority to establish inter-satellite service are encouraged to coordinate their proposed frequency usage with existing permittees and licensees in the inter-satellite service whose facilities could be affected by the new proposal in terms of frequency interference or restricted system capacity. All affected applicants, permittees, and licensees, shall at the direction of the Commission, cooperate fully and make every reasonable effort to resolve technical problems and conflicts that may inhibit effective and efficient use of the radio spectrum; however, the permittee or licensee being coordinated with is not obligated to suggest changes or re-engineer an applicant's proposal in cases involving conflicts.

18. The authority citation for Part 94 continues to read as follows:

AUTHORITY: Secs. 4, 303, 48 Stat., as amended, 1066, 1082; 47 U.S.C. 154, 303 unless otherwise noted.

19. Section 94.61 is amended by revising paragraph (b)(4) to read as follows:

§ 94.61 Applicability.

* * * * * *

(b)(4) Frequencies in this band are shared with mobile and radiolocation stations in other services, and must accept harmful interference that may be experienced from operations of industrial, scientific, or medical (ISM) equipment operating on 2450 MHz. In the 2483.5-2500 MHz band, no applications for new stations or modifications to existing stations to increase the number of transmitters will be accepted. Existing licensees as of July 25, 1985, are grandfathered and their operation is co-primary with the Radiodetermination Satellite Service and Mobile-Satellite Service. However, all grandfathered temporary fixed licensees are required to notify directly each Radiodetermination Satellite Service and Mobile-Satellite Service licensees concerning present and proposed locations of operations.

CHANGES RECOMMENDED BY
MOTOROLA SATELLITE COMMUNICATIONS, INC.
TO THE COMMISSION'S PROPOSED RULES

Title 47 of the Code of Federal Regulations, Parts 2, 25 and 94, are amended as follows:

1. The Table of Contents for Part 25 is revised to read as follows:

PART 25 - SATELLITE COMMUNICATIONS
Subpart A - General

Sec.

Subpart B - Applications and Licenses

EARTH STATIONS

25.130 Filing requirements for transmitting earth stations.

25.132 Verification of earth station antenna performance standards.

25.133 Period of construction; certification of commencement of operation.

25.134 Licensing provisions of very small aperture terminal (VSAT) networks.

25.135 Licensing provisions for earth station networks in the non-voice, non-geostationary mobile-satellite service.

25.136 Operating provisions for earth station networks in the 1.6/2.4 GHz mobile-satellite service.

SPACE STATIONS

25.140 Qualifications of domestic fixed-satellite space station licensees.

25.141 Licensing provisions for the radiodetermination satellite service.

25.142 Licensing provisions for the non-voice, non-geostationary mobile-satellite service.

25.143 Licensing provisions for the 1.6/2.4 GHz mobile satellite service.

PROCESSING OF APPLICATIONS

25.150 Receipt of Applications.

25.151 Public notice period.

25.152 Dismissal and return of applications.

25.153 Repetitious applications.

25.154 Opposition to applications and other pleadings.

25.155 Mutually exclusive applications.

25.156 Consideration of applications.

FORFEITURE, TERMINATION, AND REINSTATEMENT OF STATION AUTHORIZATION

Subpart C - Technical Standards

25.521 Who may sign applications.

25.522 Full disclosures.

25.523 Form of application, number of copies, fees, etc.

25.524 [Reserved]

25.525 Action upon applications.

25.526 Amendments.

25.527 Defective applications.

25.528 - 25.529 [Reserved]

25.530 Scope of authorization.

25.531 Revocation of authorization.

2. The authority citation for Part 25 continues to read as follows:

AUTHORITY: Sections 101 - 404, 76 Stat. 419 - 427; 47 U.S.C. 701 - 744, Sec. 4, 48 Stat. 1066, as amended; 47 U.S.C. 154. Interprets or applies sec. 303, 48 Stat. 1082, as amended; 47 U.S.C. 303.

3. Section 25.114 is amended by revising paragraphs (c)(6), (c)(18), and (c)(26), and adding new paragraphs (c)(28) and (d), to read as follows:

§ 25.114 Applications for space station authorizations.

* * * * *

(c) * * *

(6) (i) For geostationary satellite orbit satellites, orbital location, or locations if alternatives are proposed, requested for the satellite, the factors which support such an orbital assignment, the range of orbital locations from which adequate service can be provided and the basis for determining that range of orbital locations, and a detailed explanation of all factors that would limit the orbital arc over which the satellite could adequately serve its expected users.

(ii) For non-geostationary satellite orbit satellites, the number of space stations and applicable information relating to the number of orbital planes, the inclination of the orbital plane(s), the orbital period, the apogee, the perigee, the argument(s) of perigee, active

service arc(s), and right ascension of the ascending node(s).

* * * * *

(18) Detailed information demonstrating the financial qualifications of the applicant to construct and launch the proposed satellites. Applications for domestic fixed-satellite systems and mobile-satellite systems shall provide the financial information required by § 25.140(b)-(e), § 25.142(a)(4), or § 25.143(b)(3), as appropriate. Applications for international satellite systems authorized pursuant to Establishing of Satellite Systems Providing International Communications, 50 FR 42266 (October 18, 1985), 101 FCC 2d 1046 (1985), recon. 61 RR 2d 649 (1986), further recon. 1 FCC Rcd 439 (1986), shall provide the information required by that decision.

* * * * *

(26) Applications for authorizations in the Mobile-Satellite Service in the 1545-1559/1646.5-1660.5 MHz frequency bands shall also provide all information necessary to comply with the policies and procedures set forth in Rules and Policies Pertaining to the Use of Radio Frequencies in a Land Mobile Satellite Service, 52 FR 4017 (Feb. 9, 1987), 2 FCC Rcd 485 (1987).

* * * * *

(28) Applications for authorizations in the 1.6/2.4 GHz Mobile-Satellite Service shall also provide all information specified in § 25.143.

(d) Applicants requesting authority to construct and/or launch a system comprised of functionally equivalent, non-geostationary satellite orbit mobile-satellite service space stations may file a single "blanket" application containing the information specified in paragraph (c) of this section for each representative space station.

4. Section 25.115 is amended by revising paragraph (d) to read as follows:

§ 25.115 Applications for earth station authorizations.

* * * * *

(d) User transceivers in the NVNG and 1.6/2.4 GHz Mobile-Satellite Service need not be individually licensed. Service vendors may file blanket applications for transceiver units using FCC Form 493 and specifying

the number of units to be covered by the blanket license. Each application for a blanket license under this section shall include the following:

(1) A general narrative section describing the applicant and the overall system operation,
(2) A Form 430 (Licensee Qualification Report), if not already on file in conjunction with other facilities licensed under this subpart,
(3) A Form 493 for each fixed-gateway, TT&C or Network Control Center station operating with the network,
(4) A Form 493 for each representative type of user transceiver terminal unit,
(5) A designation of a point of contact where records of individual users will be maintained.

In addition, applicants in the NVNG MSS service shall provide the information described in § 25.135. Applicants in the 1.6/2.4 GHz Mobile-Satellite Service shall demonstrate that the stations comply with the technical requirements specified in § 25.213.

5. Section 25.120 is amended by revising paragraphs (d) and (e) to read as follows:

§ 25.120 License term and renewals.

* * * * *

(d) Space stations.

(1) For geostationary satellite orbit satellites, the license term will begin at 3 a.m. EST on the date the licensee certifies to the Commission that the satellite has been successfully placed into orbit and that the operations of the satellite fully conform to the terms and conditions of the space station radio authorization.

(2) For non-geostationary satellite orbit satellites, the license term will begin at 3 a.m. EST on the date that the licensee certifies to the Commission that its initial space station has been successfully placed into orbit and that the operations of that satellite fully conform to the terms and conditions of the space station system authorization. All space stations launched and brought into service during the ten-year license term shall operate pursuant to the system authorization, and the operating authority for all space stations will terminate upon the expiration of the system license.

(e) Renewal of licenses. Applications for renewals of earth station licenses must be submitted on FCC Form 405

(Application for Renewal of Radio Station License in Specified Services) no earlier than 90 days, and no later than 30 days, before the expiration date of the license. Applications for space station system replacement authorization for non-geostationary orbit satellites shall be filed at any time during the existing license term.

6. Section 25.130 is amended by revising paragraph (b) to read as follows:

§ 25.130 Filing requirements for transmitting earth stations.

* * * * *

(b) A frequency coordination analysis in accordance with § 25.203 shall be provided for earth stations transmitting in the frequency bands shared with equal rights between terrestrial and space services, except that applications for user transceiver units associated with the NVNG mobile-satellite service shall instead provide the information required by § 25.135 and applications for user transceiver units associated with the 1.6/2.4 GHz Mobile-Satellite Service shall demonstrate that user transceiver operations comply with the requirements set forth in § 25.213.

7. Section 25.133 is amended by revising paragraph (b) to read as follows:

§ 25.133 Period of construction; certification of commencement of operation.

* * * * *

(b) Each license for a transmitting earth station included in this part shall also specify as a condition therein that upon the completion of construction, each licensee must file with the Commission a certification containing the following information: The name of the licensee; file number of the application; call sign of the antenna; date of the license; a certification that the facility as authorized has been completed and that each antenna facility has been tested and is within 2 dB of the pattern specified in § 25.209; the date on which the station became operational; and a statement that the station will remain operational during the license period unless the license is submitted for cancellation. For stations authorized under § 25.115(c) of this part (Large Networks of Small Antennas operating in the 12/14 GHz bands) and § 25.115(d) of this part (User Transceivers in the Mobile-Satellite Service), a certificate must be filed when the network is put into operation.

8. A new section 25.136 is added to read as follows:

§ 25.136 Operating provisions for earth station networks in the 1.6/2.4 GHz Mobile-Satellite Service

In addition to the technical requirements specified in § 25.213, earth stations operating in the 1.6/2.4 GHz Mobile-Satellite Service are subject to the following operating conditions:

(a) User transceiver units associated with the 1.6/2.4 GHz Mobile-Satellite Service may not be operated on civil aircraft unless the earth station has a direct physical connection to the aircraft cockpit and/or cabin communication system.

(b) User transceiver units in this service are authorized to communicate with and through U.S. authorized space stations only. No person shall transmit to a space station unless the specific transmission is first authorized by the space station licensee or by a service vendor authorized by that licensee.

(c) Any user transceiver unit associated with this service will be deemed, when communicating with a particular 1.6/2.4 GHz Mobile-Satellite service system pursuant to paragraph (b) of this section, to be temporarily associated with and licensed to the system operator or service vendor holding the blanket earth station license awarded pursuant to Section 25.115(d). The domestic earth station licensee shall, for this temporary period, assume the same licensee responsibility for the user transceiver as if the user transceiver were regularly licensed to it.

9. Section 25.141 is amended by revising paragraphs (a) and (f) to read as follows:

§ 25.141 Licensing provisions for the Radiodetermination Satellite Service.

(a) Space station application requirements. Each application for a space station license in the Radiodetermination Satellite Service shall describe in detail the proposed radiodetermination satellite system, setting forth all pertinent technical and operational aspects of the system, including its capability for providing and controlling radiodetermination service on a geographic basis, and the technical, legal and financial qualifications of the applicant. In particular, each application shall include the information specified in Appendix B of Space Station Application Filing Procedures, 93 FCC 2d 1260, 1265 (1983), except that in lieu of demonstrating compliance with item II.F (two degree spacing), applicants are required to demonstrate

compatibility with licensed satellite systems in the same frequency band. Applicants must also file information demonstrating compliance with all requirements of this section, specifically including information demonstrating how the applicant has complied or plans to comply with the requirements of paragraph (f) of this section.

* * * * *

(f) Radiodetermination Satellite Service. Radiodetermination satellite system licensees shall coordinate with other radiodetermination satellite systems to avoid harmful interference through (1) power flux density limits; (2) use of pseudorandom-noise codes (for both the satellite-to-user link and for the user-to-satellite link); and (3) random access, time division multiplex techniques. Radiodetermination satellite system licensees shall coordinate with 1.6/2.4 GHz Mobile-Satellite Service system licensees to avoid harmful interference to 1.6/2.4 GHz Mobile-Satellite Service systems.

10. A new Section 25.143 is added to read as follows:

§ 25.143 Licensing provisions for the 1.6/2.4 GHz Mobile-Satellite Service.

(a) System License: Applicants authorized to construct and launch a system of functionally equivalent non-geostationary satellite orbit satellites will be awarded a single "blanket" license covering a specified number of space stations.

(b) Qualification Requirements

(1) General Requirements: Each application for a space station system authorization in the 1.6/2.4 GHz Mobile-Satellite Service shall describe in detail the proposed satellite system, setting forth all pertinent technical and operational aspects of the system, and the technical, legal, and financial qualifications of the applicant. In particular, each application shall include the information specified in § 25.114.

(2) Technical Qualifications: In addition to providing the information specified in (b)(1), each applicant shall demonstrate the following:

(i) that the proposed system employs a non-geostationary constellation or constellations of satellites;

(ii) that the proposed system is capable of providing Mobile Satellite Services to all areas of the world, with the exception of the polar

regions (above 80° latitude), at least 75% of every 24-hour period, i.e., that at least one satellite will be visible above the horizon from any point in the world other than the polar regions for at least 18 hours a day at the design elevation angle required for the system to provide Mobile Satellite Services to that point, provided that this angle must be at least 5°;

(iii) that each applicant certifies that it shall establish, or arrange for the establishment of, the ground segment infrastructure necessary to permit provision of Mobile Satellite Service in countries representing at least 75% of the surface area and population of the world within six years of the grant of its space station license;

(iv) that the proposed system is capable of providing Mobile Satellite Service on a continuous basis throughout the fifty states of the U.S., and all U.S. territories and possessions including Guam, American Samoa, the Commonwealth of Puerto Rico and the U.S. Virgin Islands, i.e., that at least one satellite will be visible above the horizon from any point in the foregoing territory for 24 hours a day at the design elevation angle required for the system to provide Mobile Satellite Service to that point, provided that this angle is at least 5°;

(v) that operations will not cause harmful interference to other authorized users of the spectrum. In particular, each application shall demonstrate that the space station(s) comply with the requirements specified in § 25.213.

(vi) For the purpose of demonstrating that it is qualified under this paragraph, each applicant shall certify in its application the minimum elevation angle at which its system can provide Mobile Satellite Service, and shall submit satisfactory technical documentation to support this certification.

(3) Financial Qualifications: Each applicant for a space station system authorization in the 1.6/2.4 GHz Mobile-Satellite Service must demonstrate, on the basis of the documentation contained in its application, that it is financially qualified to meet the estimated costs of the construction and launch of all proposed space stations in the system and the estimated operating expenses for one year after the launch of the entire constellation as set forth in its application.

Financial qualifications must be demonstrated in the form specified in §§ 25.140(c) and (d).

(4) Failure to make any of the showings required in this part of the rules will result in the dismissal of the application.

(c) Replacement of Space Stations Within the System License Term. Licensees of non-geostationary 1.6/2.4 GHz mobile-satellite systems authorized through a blanket license pursuant to paragraph (a) of this section need not file separate applications to construct, launch and operate functionally equivalent replacement satellites within the term of the system authorization. However, the licensee shall certify to the Commission, at least thirty days prior to launch of such replacement(s) that:

(1) the licensee intends to launch a space station that is functionally equivalent to those authorized in its system authorization, and

(2) launch of this space station will not cause the licensee to exceed the total number of operating space stations authorized by the Commission.

(d) In-Orbit Spares. Licensees need not file separate applications to operate functionally equivalent in-orbit spares authorized as part of the blanket license pursuant to paragraph (a) of this section. However, the licensee shall certify to the Commission, within 10 days of bringing the in-orbit spare into operation, that operation of this space station did not cause the licensee to exceed the total number of operating space stations authorized by the Commission.

(e) Reporting requirements.

(1) All licensees of 1.6/2.4 GHz mobile-satellite systems shall, on June 30 of each year, file with the Common Carrier Bureau and the Field Office in Laurel, Maryland a report containing the following information:

(i) Status of satellite construction and anticipated launch dates, including any major problems or delays encountered;

(ii) A listing of any non-scheduled space station outages for more than 2 hours and the cause or causes of the outage, if known;

(iii) Identification of any space stations not available for service or otherwise not performing to specifications, the cause or causes of these difficulties, and the date any space station was

taken out of service or the malfunction identified.

(2) All licensees of 1.6/2.4 GHz mobile-satellite system shall, within 10 days after a required implementation milestone as specified in the system authorization, certify to the Commission by affidavit that the milestone has been met or notify the Commission by letter that it has not been met. At its discretion, the Commission may require the submission of additional information (supported by affidavit of a person or persons with knowledge thereof) to demonstrate that the milestone has been met.

(f) Safety and distress communications. Stations operating in the 1.6/2.4 GHz Mobile-Satellite Service that are used to comply with any statutory or regulatory equipment carriage requirements may be subject to the provisions of Sections 321(b) and 359 of the Communications Act of 1934, as amended. Licensees are advised that these provisions give priority to radio communications or signals relating to ships in distress and prohibits a charge for the transmission of maritime distress calls and related traffic.

(g) Considerations involving transfer or assignment applications.

(1) "Trafficking" in licenses issued pursuant to paragraph (a) of this section is prohibited.

(2) The Commission will review a proposed transaction to determine if the circumstances indicate trafficking in licenses whenever applications (except those involving pro forma assignment or transfer of control) for consent to assignment or a license, or for transfer of control of a licensee, involve facilities licensed pursuant to paragraph (a) of this section. At its discretion, the Commission may require the submission of an affirmative, factual showing (supported by affidavits of a person or persons with personal knowledge thereof) to demonstrate that no trafficking has occurred.

(3) If a proposed transfer of radio facilities is incidental to a sale of other facilities or merger of interests, any showing requested under paragraph (g)(2) of this section shall include an additional exhibit which:

(i) Discloses complete details as to the sale of facilities or merger of interests;

(ii) Segregates clearly by an itemized accounting, the amount of consideration involved in the sale of facilities or merger of interests; and

(iii) Demonstrates that the amount of consideration assignable to the facilities or business interests involved represents their fair market value at the time of the transaction.

11. Section 25.201 is amended by adding new paragraphs, in alphabetical order, to read as follows:

§ 25.201 Definitions.

Aeronautical Mobile-Satellite Service: A mobile-satellite service in which mobile earth stations are located on board aircraft; survival craft stations and emergency position-indicating radiobeacon stations may also participate in this service.

Aeronautical Mobile-Satellite (R) Service: An aeronautical mobile-satellite service reserved for communications relating to safety and regularity of flights, primarily along national or international civil air routes.

* * * * *

Mobile-Satellite Service. A radiocommunication service: (1) Between mobile earth stations and one or more space stations, or between space stations used by this service; or (2) Between mobile earth stations by means of one or more space stations. This service may also include feeder links necessary for its operation. [RR]

* * * * *

1.6/2.4 GHz Mobile-Satellite Service. A mobile-satellite service that operates in the 1610-1626.5 MHz and 2483.5-2500 MHz frequency bands, or in any portion thereof.

* * * * *

12. Section 25.202 is amended by adding new paragraphs (a)(4), (a)(5) and (a)(6), revising paragraph (f) and adding new paragraphs (g) and (h) to read as follows:

§ 25.202. Frequencies, frequency tolerance and emission limitations.

* * * * *

(a) * * *

(4) The following frequencies are available for use by the 1.6/2.4 GHz Mobile-Satellite Service:

1610-1626.5 MHz User-to-Satellite Link
1613.8-1626.5 MHz: Satellite-to-User Link (secondary)
2483.5-2500 MHz: Satellite-to-User Link

(5) The following frequencies are available for use by the intersatellite service:

22.55-23.00 GHz
23.00-23.55 GHz
24.45-24.65 GHz
24.65-24.75 GHz

(6) The following frequencies are available for use by the Aeronautical Mobile Satellite (R) Service:

1610.00-1626.5 MHz (Earth-to-Space)
1610.00-1626.5 MHz (Space-to-Earth)

* * * * *

(f) Emission limitations. Except as specified in subsections (g) and (h), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule.

* * * * *

(g) Emission limitations in the 1610-1626.5 MHz band. Earth stations with a maximum antenna gain of 0 dBi at 0° local elevation and 3 dBi at other elevation angles when the transmitter is operated in its normal configuration and attitude. The mean power of emissions shall not exceed the power spectral density limits specified for each area of frequency separations from the band edge or the boundary between the segments of the 1610-1626.5 MHz band assigned respectively to Code Division Multiple Access and Frequency Division Multiple Access/Time Division Multiple Access modulations, as follows:

Frequency Separation	Power Spectral Density
Δf <125 kHz	-45 dBW/3 kHz
125 kHz $\leq \Delta f$ <1.25 MHz	-60 dBW/3 kHz
$\Delta f \geq$ 1.25 MHz	-70 dBW/3 kHz

Where Δf is the frequency separation from the edge of the authorized band segment.

(h) Emission limitations in the 1610-1626.5 MHz band, Earth stations with maximum antenna gain exceeding the limits specified in subsection (g). The mean power of emissions shall not exceed the power spectral density limits specified for each area of frequency separations from the band edge or the boundary between the segments of the 1610-1626.5 MHz band assigned respectively to Code Division Multiple Access and Frequency Division Multiple Access/Time Division Multiple Access modulations, as follows:

Frequency Separation	Power Spectral Density
Δf <125 kHz	-45 dBW/3 kHz-[10log(G)-3 dB]
125 kHz ≤ Δf <1.25 MHz	-60 dBW/3 kHz-[10log(G)-3 dB]
Δf ≥ 1.25 MHz	-70 dBW/3 kHz-[10log(G)-3 dB]

Where Δf is the frequency separation from the edge of the authorized band segment, and G is the maximum antenna gain at any elevation angle in dBi.

13. Section 25.203 is amended by revising subsections (b) and (c)(2)(vii), redesignating subsections (c) through (i) as (d) through (j), and adding new subsections (k) and (l) to read as follows:

§ 25.203 Choice of sites and frequencies.

* * * * *

(b) An applicant for an earth station authorization in association with a geostationary space station in a frequency band shared with equal rights with terrestrial microwave services shall compute the great circle coordination distance contour(s) for the proposed station in accordance with the procedures set forth in §§ 25.251 through 25.253 and the rain scatter coordination distance contour(s) for the proposed station in accordance with the procedures set forth in § 25.254. The applicant shall submit with his application a map or maps drawn to appropriate scale and in a form suitable for reproduction indicating the location of the proposed station and these contours. These maps, together with the pertinent data on which the computation of these contours is based, including all relevant transmitting and/or receiving parameters of the proposed station that might be useful in assessing the likelihood of interference, an appropriately scaled plot of the elevation of the local horizon as a function of azimuth, and the electrical characteristics of the earth station antenna(s), shall be submitted by the applicant in a single exhibit to his application. At a minimum, this exhibit (labeled "Exhibit 2"), shall include the information listed

in paragraph (d)(2) of this section. An earth station applicant shall also include in his application relevant technical details (both theoretical calculations and/or actual measurements) of any special techniques, such as the use of artificial site shielding, or operating procedures or restrictions at the proposed earth station which to be employed to reduce the likelihood of interference, or of any particular characteristics of the earth station site, such as horizon obstacles closer than 1 kilometer, which could have an effect on the calculation of the coordination distance.

(c) An applicant for an earth station authorization in association with a non-geostationary space station in a frequency band shared with equal rights with terrestrial microwave services shall compute the coordination contours in accordance with the method prescribed in Recommendation 849 as set forth in the ITU 1992 CCIR Recommendations RIS Series Inter-Service Sharing and Compatibility.

(d) Prior to the filing of his application, an earth station applicant (both non-GSO and GSO) shall coordinate the proposed frequency usage with existing terrestrial users and with applicants for terrestrial station authorizations with previously filed applications in accordance with the following procedure:

(1) An applicant for an earth station authorization shall perform an interference analysis in accordance with the procedures set forth in § 25.255 (where the earth station(s) would operate in association with a geostationary space station) or ITU-R Recommendation 849 (where the earth station(s) would operate in association with a non-geostationary space station) as appropriate for each terrestrial station, for which a license or construction permit has been granted or for which an application has been accepted for filing, which is or is to be operated in a shared frequency band to be used by the proposed earth station and which is located within the great circle coordination distance contour(s) of the proposed earth station.

(2) The earth station applicant shall provide each such terrestrial station licensee, permittee, and prior filed applicant with the technical details of the proposed earth station and the relevant interference analyses that were made. At a minimum, the earth station applicant shall provide the terrestrial user with the following technical information:

(i) The geographical coordinates of the proposed earth station antenna(s),

(ii) Proposed operating frequency band(s) and emission(s),

(iii) Antenna center height above ground and ground elevation above mean sea level,

(iv) Antenna gain pattern(s) in the plane of the main beam,

(v) Longitude range of geostationary satellites at which antenna may be pointed,

(vi) Horizon elevation plot,

(vii) Antenna horizon gain plot(s) determined in accordance with § 25.253(b) or ITU-R Recommendation 849 as appropriate for satellite longitude range specified in paragraph (d)(2)(v) of this section, taking into account the provisions of § 25.253(a)(2) for earth stations operating with non-geostationary satellites,

(viii) Minimum elevation angle,

(ix) Maximum effective isotropically radiated power (EIRP) in any 4 kHz band in the main beam (dBW/4 kHz),

(x) Maximum available RF transmit power in any 1 MHz band and in any 4 kHz band at the input terminals of the antenna(s),

(xi) Maximum permissible RF interference power level as determined in accordance with § 25.252 or ITU-R Recommendation 849 as appropriate for all applicable percentages of time, and

(xii) A plot of great circle coordination distance contour(s) and rain scatter coordination distance contour(s) as determined by §§ 25.253 and 25.254 or ITU-R Recommendation 849 as appropriate.

(3) The coordination procedure specified in § 21.100(d) of this chapter shall be applicable except that the information to be provided shall be that set forth in paragraph (d)(2) of this section, and that the 30-day period allowed for response to a request for coordination may be increased to a maximum of 45 days by mutual consent of the parties.

(4) Where technical problems are resolved by an agreement or operating arrangement between the parties that would require special procedures be taken to reduce the likelihood of harmful interference (such as the use of artificial site shielding) or would result in lessened

quality or capacity of either system, the details thereof shall be contained in the application.

(5) In those instances where the calculations of expected interference indicate a margin of less than 5 dB, the applicant shall submit with the application to the Commission, certain additional information: The gains assumed for both the terrestrial and earth station antennas in the direction of the other station; the calculated transmission loss; and the resulting margin above the controlling objective. The Commission may, in the course of examining any application, require the submission of additional showings, complete with pertinent data and calculations in accordance with §§ 25.251 through 25.256, showing that harmful interference will not likely result from the proposed operation.

* * * * *

(k) Applicants for non-geostationary 1.6/2.4 GHz Mobile-Satellite Service and Radiodetermination Satellite Service feeder links within the bands specified in § 25.202(a)(1) shall indicate the frequencies and spacecraft antenna gain contours towards each feeder-link earth station location and will coordinate with licensees of other Fixed-Satellite Service and terrestrial-service systems sharing the band.

(l) An applicant for an earth station that will operate with a geostationary satellite or non-geostationary satellite in a shared frequency band in which the non-geostationary system is (or is proposed to be) licensed for feeder links, shall demonstrate in its application that its proposed earth station will not cause unacceptable interference to any other satellite network that is authorized to operate in the same frequency band, or certify that the operations of its earth station shall conform to established coordination agreements between the operator(s) of the space station(s) with which the earth station is to communicate and the operator(s) of any other space station licensed to use the band.

14. Section 25.208 is amended by revising paragraph (c) to read as follows:

§ 25.208 Power flux density limits.

(c) In the 17.7-19.7 GHz, 22.55-23.00 GHz, 23.00-23.55 GHz, and 24.45-24.75 GHz frequency bands, the power flux density at the Earth's surface produced by emissions from a space station for all conditions and for all methods of modulation shall not exceed the following values: